

Cognitive Behavioral Therapy (CBT) for depressed adolescents

Benefit-cost estimates updated August 2014. Literature review updated April 2012.

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our [technical documentation](#).

Program Description: Treatments include various components, such as cognitive restructuring, behavioral activation, emotion regulation, communication skills, and problem-solving. Most commonly, studies offering this treatment provided 10-20 therapeutic hours per client in individual or group modality. One well-known example is the Adolescent Coping With Depression (CWD-A) program.

Benefit-Cost Summary

Program benefits		Summary statistics	
Participants	\$80	Benefit to cost ratio	\$1.11
Taxpayers	\$90	Benefits minus costs	\$55
Other (1)	\$85	Probability of a positive net present value	51 %
Other (2)	\$300		
Total	\$555		
Costs	(\$500)		
Benefits minus cost	\$55		

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our [technical documentation](#).

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				Total benefits
	Participants	Taxpayers	Other (1)	Other (2)	
From primary participant					
Crime	\$0	\$2	\$6	\$1	\$8
Labor market earnings (major depression)	\$59	\$25	\$0	\$518	\$602
Health care (major depression)	\$21	\$64	\$79	\$32	\$196
Adjustment for deadweight cost of program	\$0	\$0	\$0	(\$251)	(\$251)
Totals	\$80	\$90	\$85	\$300	\$555

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

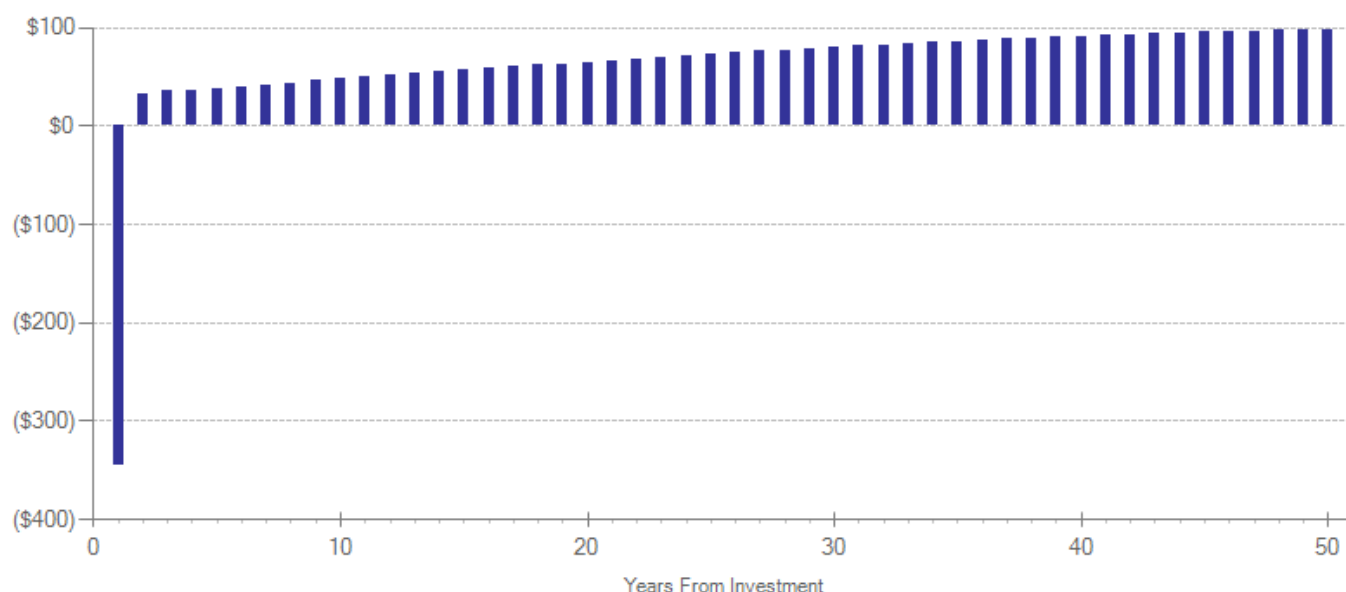
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	\$1,207	1	2010	Present value of net program costs (in 2013 dollars)	(\$500)
Comparison costs	\$733	1	2010	Uncertainty (+ or - %)	10 %

Based on therapist time, as reported in the treatment studies, as well as training costs and a flat fee for materials (e.g., manuals). Hourly therapist cost is based on the latest actuarial estimates of reimbursement by modality in WA State (DSHS).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our [technical documentation](#).

Cumulative Net Cash Flows Over Time (Non-Discounted Dollars)



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
			ES	p-value	First time ES is estimated			Second time ES is estimated		
					ES	SE	Age	ES	SE	Age
Externalizing behavior symptoms	Primary	5	-0.039	0.698	-0.029	0.099	16	-0.014	0.052	19
Major depressive disorder	Primary	11	-0.595	0.001	-0.277	0.088	16	0.000	0.024	17
Hospitalization (psychiatric)	Primary	1	-0.143	0.001	-0.091	0.214	16	0.000	0.019	17
Suicide attempts	Primary	1	0.000	1.000	0.000	0.215	16	0.000	0.019	17
Suicidal ideation	Primary	2	-0.329	0.011	-0.329	0.130	16	0.000	0.029	17
Primary care visits	Primary	1	-0.135	0.529	-0.086	0.214	16	0.000	0.019	17

Citations Used in the Meta-Analysis

- Brent, D.A., Holder, D., Kolko, D., Birmaher, B., Baugher, M., Roth, C., . . . Johnson, B.A. (1997). A clinical psychotherapy trial for adolescent depression comparing cognitive, family, and supportive therapy. *Archives of General Psychiatry*, 54(9), 877-885.
- Clarke, G.N., Rohde, P., Lewinsohn, P.M., Hops, H., & Seeley, J.R. (1999). Cognitive-behavioral treatment of adolescent depression: Efficacy of acute group treatment and booster sessions. *Journal of the American Academy of Child & Adolescent Psychiatry*, 38(3), 272-279.
- Clarke, G.N., Hornbrook, M., Lynch, F., Polen, M., Gale, J., O'Connor, E., . . . Debar, L. (2002). Group cognitive-behavioral treatment for depressed adolescent offspring of depressed parents in a health maintenance organization. *Journal of the American Academy of Child & Adolescent Psychiatry*, 41(3), 305-313.

- Kahn, J.S., Kehle, T.J., Jenson, W.R., & Clark, E. (1990). Comparison of cognitive-behavioral, relaxation, and self-modeling interventions for depression among middle-school students. *School Psychology Review, 19*(2), 196-211.
- Kennard, B., Silva, S., Vitiello, B., Curry, J., Kratochvil, C., Simons, A., et al. (2006). Remission and residual symptoms after short-term treatment in the Treatment of Adolescents with Depression Study (TADS). *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(12), 1404-1411.
- Lewinsohn, P.M., Clarke, G.N., Hops, H. & Andrews, J. (1990). Cognitive-behavioral treatment for depressed adolescents. *Behavior Therapy, 21*(4), 385-401.
- March, J., Silva, S., Petrycki, S., Curry, J., Wells, K., Fairbank, J., et al. (2004). Fluoxetine, cognitive-behavioral therapy, and their combination for adolescents with depression: Treatment for Adolescents With Depression Study (TADS) randomized controlled trial. *JAMA, 292*(7), 807-820.
- Reynolds, W.M., & Coats, K.I. (1986). A comparison of cognitive-behavioral therapy and relaxation training for the treatment of depression in adolescents. *Journal of Consulting and Clinical Psychology, 54*(5), 653-660.
- Rohde, P., Clarke, G.N., Mace, D.E., Jorgensen, J.S., & Seeley, J.R. (2004). An efficacy/effectiveness study of cognitive-behavioral treatment for adolescents with comorbid major depression and conduct disorder. *Journal of the American Academy of Child & Adolescent Psychiatry, 43*(6), 660-668.
- Rossello, J., Bernal, G. (1999). The efficacy of cognitive-behavioral and interpersonal treatments for depression in Puerto Rican adolescents. *Journal of Consulting and Clinical Psychology, 67*(5), 734-745.
- Vitiello, B., Rohde, P., Silva, S., Wells, K., Casat, C., Waslick, B., et al. (2006). Functioning and quality of life in the Treatment for Adolescents with Depression Study (TADS). *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(12), 1419-1426.
- Vostanis, P., Feehan, C., Grattan, E., & Bickerton, W.L. (1996). Treatment for children and adolescents with depression: Lessons from a controlled trial. *Clinical Child Psychology and Psychiatry, 1*(2), 199-212.
- Vostanis, P., Feehan, C., & Grattan, E. (1998). Two-year outcome of children treated for depression. *European Child & Adolescent Psychiatry, 7*(1), 12-8.
- Wood, A., Harrington, R., & Moore, A. (1996). Controlled trial of a brief cognitive-behavioural intervention in adolescent patients with depressive disorders. *Journal of Child Psychology and Psychiatry, and Allied Disciplines, 37*(6), 737-746.

For further information, contact:
(360) 586-2677, institute@wsipp.wa.gov

Printed on 11-20-2014



Washington State Institute for Public Policy

The Washington State Legislature created the Washington State Institute for Public Policy in 1983. A Board of Directors-representing the legislature, the governor, and public universities-governs WSIPP and guides the development of all activities. WSIPP's mission is to carry out practical research, at legislative direction, on issues of importance to Washington State.